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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/815,074
Filing Date: March 31, 2004
Appellant(s): LAWRENCE ET AL.

Jie Zhang (60,242)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 3/17/2010 appealing from the Office action mailed 10/26/2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

Claims 2, 23, and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Accordingly, claims 1, 3-22, 24, 25, 27, and 28 stand finally rejected.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

In view of the claim objections to claim 2, 23, and 26 noted above, claims 1, 4-12, 15-18, 21, 22, 24 and 25 are to be reviewed on appeal as being anticipated by U.S. Patent 7,099,860 to Liu et al. ("Liu").

Grounds of rejection for claims 3, 13, 14, 19, 20, 27, and 28 are correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

7099860	Liu et al	8-2006
2003/0135490	Barret et al.	7-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 4-12, 15-18, and 21-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Liu et al. ('Liu' hereafter) (U.S. Patent 7,099,860). Liu teaches the claims in the following drawing references of figures 1-7 and the following cited portions.

With respect to claim 1, Liu teaches A computer-implemented method for ranking information, comprising:

receiving a plurality of query results (col. 3 line 32-34 and figures 6-7; e.g. retrieving a plurality of images in response to a search) of a plurality of search queries (col. 3 line 23-25 and col. 7 line 67-col. 8 line 10 as well as figure 3 drawing reference 302 and col. 12 step 1; e.g. keywords parsed from a query) that were submitted separately (col. 5 line 67-col. 6 line 7 and col. 8 lines 11-14; i.e. the system may also simultaneously search of similar words wherein simultaneous searches can be seen as separately submitted queries);

merging (col. 8 line 22-23; i.e. *adding* found images to the result set) the plurality of query results (col. 3 line 32-34 and figures 6-7) into a merged query result (figs. 6-7), the merged query result (figs. 6-7) being associated with the plurality of search queries (col. 6 line 20-24 and figure 3 which shows keywords associated to images);

determining a first ranking sequence (fig. 4 drawing reference 412) of the merged query result (col. 7 line 15-18figs. 6-7);

presenting the merged query result (figs. 6-7) to a user (figure 2 drawing reference 200) according to the first ranking sequence (col. 7 line 19-21 and drawing reference 416; i.e. displaying a result set from initial query handling);

identifying an input signal (figure 5 drawing reference 502) from the user (200) indicating an interest (col. 7 line 22-23) in a first piece of information (col. 7 line 22-23; i.e. an image a user finds relevant/not relevant) in the merged query result (figures 6-7);

identifying a search query from the plurality of search queries (col. 3 lines 41-48, col. 10 step 4) associated with the merged query result (figs. 6-7), the identified search query (col. 3 lines 41-48, col. 10 step 4) being associated with a query result (figure 3 drawing reference 304 and col. 8 line 57; e.g. an association link) including the first piece of information (col. 6 line 8-19), the query result from among the plurality of query results (col. 10 step 4; "for each positive example, check if any query is linked to it…");

adjusting (col. 3 line 49-50) a query factor associated with the identified search query (col. 5 line 24-29; e.g. a weight indicating a relevance of a keyword to an image) responsive to the input signal (col. 8 line 52-64);

locating a second piece of information in the query result (col. 9 line 13-19; "the feature and semantic matcher 152 also try to locate images that have similar low-level features as the example image selected by the user"; herein, the semantic and low-level features as well as the similar images found can be interpreted as an example of the "second piece of information in the query result") associated with the identified search query (col. 3 lines 41-48, col. 10 step 4);

determining a score for the second piece of information (col. 9 line 16-19) based at least in part on the query factor col. 5 line 24-29; e.g. a weight indicating a relevance of a keyword to an image) associated with the identified search query (col. 3 lines 41-48, col. 10 step 4);

determining a second ranking sequence (col. 12 step 7) of the merged query result based at least in part on the score (col. 7 line 49-50 and figure 5); and

presenting the merged query result to the user according to the second ranking sequence (col. 12 step 8 and drawing references 508, 518 as well as figures 6-7).

With respect to claim 2, Liu teaches the method of claim 1, wherein the first piece of information is included in a second query result associated with a second search query in the plurality of search queries, the second query result from among the plurality of query results, the method further comprising:

identifying the second search query (col. 10 line 32-33 and figure 3 wherein multiple query keywords are checked) from the plurality of search queries responsive to identifying the input signal (col. 10 line 27-28);

determining a first index score (fig. 3 w_{12} and col. 12 line 24-25; e.g. a ranking score) of the first piece of information (fig. 3; e.g. 304(2)) in the search result associated with the identified search query (fig. 3; e.g. 301(1)), the first index score measuring how well keywords in the identified search query match the first piece of information (col. 6 line 34-35; e.g. weights are assigned according to relevance);

determining a second index score (fig. 3 w_{21} and col. 12 line 24-25; e.g. a ranking score) of the first piece of information (fig. 3; e.g. 304(2)) in the second query result associated with the second search query, the second index score measuring how well keywords in the second search query match the first piece of information (col. 6 line 34-35; e.g. weights are assigned according to relevance);

adjusting a second query factor associated with the second search query responsive to the input signal and based on the second index score (col. 11 line 40-44 and col. 12 line 16-21),

wherein adjusting the query factor associated with the identified search query comprises adjusting the query factor based on the first index score (col. 10 line 25-36);

locating a third piece of information (fig. 3; e.g. 304(M)) in the second query result associated with the second search query (fig. 3; e.g. 302(M));

determining a second score (fig. 3; e.g. w_{n1} for the third piece of information based at least in part on the second query factor associated with the second search query (fig. 3; e.g. 302(M));

wherein determining the second ranking sequence (fig. 5 drawing reference 510; e.g. a refinement of the results) of the merged query result further comprising determining the second ranking sequence of the merged query result based at least in part on the score for the second piece of information and the second score for the third piece of information (col. 12 line 25-27).

With respect to claim 4, Liu teaches the method of claim 1, wherein the input signal comprises user activity associated with the first piece of information (col. 8 line 45-51).

With respect to claim 5, Liu teaches the method of claim 4, wherein the user activity comprises one or more of viewing duration, scrolling, mouse movement, selection of links from the first piece of information, saving, printing, and bookmarking (col. 8 line 47-48 describes at least “mouse movement” as well as “bookmarking").

With respect to claim 6, Liu teaches the method of claim 4, wherein the input signal further comprises user activity associated with articles linked from the first piece of information (col. 9 lines 61-67).

With respect to claim 7, Liu teaches the method of claim 1, further comprising:

identifying parts of text typed by the user (col. 5 line 67-col. 6 line 3; "a natural language parser 202 to parse text-based queries, such as keywords phrases and sentences"), the parts including at least two of the following: nouns, verbs, and proper nouns (col.8 lines 1-10 wherein Liu describes extracting keywords "tigers", "pictures", and "images" to teach identifying at least two nouns as well as separating these keywords from "looking for" and "find" which can be seen as identified verbs); and

generating the plurality of search queries based on the identified parts (col. 8 line 5-10 and drawing reference 408).

With respect to claim 8, Liu teaches the method of claim 1, wherein the input signal comprises a user rating (col. 9 lines 64-67).

With respect to claim 9, Liu teaches the method of claim 1, wherein one of the plurality of search queries comprises one of query type, query term, application, type of application, article type, and event type (col. 5 line 16 and col. 6 line 1).

With respect to claim 10, Liu teaches the method of claim 9, wherein the query type comprises one of current sentence, current paragraph, text near the cursor, extracted terms, and identified entries (col. 6 line 2; e.g. extracted keywords).

With respect to claim 11, Liu teaches the method of claim 1, wherein the score comprises a relevance score (col. 5 line 30-31).

With respect to claim 12, Liu teaches the method of claim 1, wherein the score comprises a popularity score (col. 10 line21; e.g. a voting scheme describes "popularity").

With respect to claim 15, Liu teaches the method of claim 1, wherein the input signal comprises multiple input signals (col. 9 line 52-67; e.g. "view", rating and "similar" are all inputs effected to suggest a users interest).

With respect to claim 16, Liu teaches the method of claim 1, further comprising:

generating the plurality of search queries based on a plurality of data streams (col. 8 line 1-4);

and executing the plurality of search queries for the plurality of search results (figure 4, drawing reference 406).

With respect to claim 17, Liu teaches the method of claim 16, wherein the plurality of data streams comprise a data stream describing current contextual state of a user (figure 5

drawing reference 504-518; e.g. finding images based on a selected image describes implicitly finding related images to a user's context (e.g. preference).

With respect to claim 18, Liu teaches A computer program product having a computer-readable storage medium having executable computer program instructions tangibly embodied thereon for ranking information, the executable computer program instructions comprising instructions for:

receiving a plurality of query results (col. 3 line 32-34 and figures 6-7; e.g. retrieving a plurality of images in response to a search) of a plurality of search queries (col. 3 line 23-25 and col. 7 line 67-col. 8 line 10 as well as figure 3 drawing reference 302 and col. 12 step 1; e.g. keywords parsed from a query) that were submitted separately (col. 5 line 67-col. 6 line 7 and col. 8 lines 11-14; i.e. the system may also simultaneously search of similar words wherein simultaneous searches can be seen as separately submitted queries);

merging (col. 8 line 22-23; i.e. *adding* found images to the result set) the plurality of query results (col. 3 line 32-34 and figures 6-7) into a merged query result (figs. 6-7), the merged query result (figs. 6-7) being associated with the plurality of search queries (col. 6 line 20-24 and figure 3 which shows keywords associated to images);

determining a first ranking sequence (fig. 4 drawing reference 412) of the merged query result (col. 7 line 15-18figs. 6-7);

presenting the merged query result (figs. 6-7) to a user (figure 2 drawing reference 200) according to the first ranking sequence (col. 7 line 19-21 and drawing reference 416; i.e. displaying a result set from initial query handling);

identifying an input signal (figure 5 drawing reference 502) from the user (200) indicating an interest (col. 7 line 22-23) in a first piece of information (col. 7 line 22-23; i.e. an image a user finds relevant/not relevant) in the merged query result (figures 6-7);

identifying a search query from the plurality of search queries (col. 3 lines 41-48, col. 10 step 4) associated with the merged query result (figs. 6-7), the identified search query (col. 3 lines 41-48, col. 10 step 4) being associated with a query result (figure 3 drawing reference 304 and col. 8 line 57; e.g. an association link) including the first piece of information (col. 6 line 8-19), the query result from among the plurality of query results (col. 10 step 4; "for each positive example, check if any query is linked to it…" ;

adjusting (col. 3 line 49-50) a query factor associated with the identified search query (col. 5 line 24-29; e.g. a weight indicating a relevance of a keyword to an image) responsive to the input signal (col. 8 line 52-64);

(col. 9 line 13-19; "the feature and semantic matcher 152 also try to locate images that have similar low-level features as the example image selected by the user"; herein, the semantic and low-level features as well as the similar images found can be interpreted as an example of the "second piece of information in the query result");

determining a score for the second piece of information (col. 9 line 16-19) based at least in part on the query factor col. 5 line 24-29; e.g. a weight indicating a relevance of a keyword to an image) associated with the identified search query (col. 3 lines 41-48, col. 10 step 4);

determining a second ranking sequence (col. 12 step 7) of the merged query result based at least in part on the score (col. 7 line 49-50 and figure 5); and

presenting the merged query result to the user according to the second ranking sequence (col. 12 step 8 and drawing references 508m, 518 as well as figures 6-7).

With respect to claim 21, Liu teaches the computer program product of claim 18, the executable computer program instructions further comprising instructions for:

generating the plurality of search queries based on a plurality of data streams (col. 8 line 1-4);

and executing the plurality of search queries for the plurality of search results (figure 4, drawing reference 406).

With respect to claim 22, Liu teaches the method of claim 1, wherein determining the second ranking sequence comprises:

determining the second ranking sequence of at least some of the merged query result based at least in part on the score (figure 5 and col. 12 steps 7-8), the at least some of the merged query result associated with at least two search queries (figure 3 and col. 12 step 1).

With respect to claim 23, Liu teaches the computer program product of claim 18, wherein the first piece of information is included in a second query result associated with a second search query in the plurality of search queries, the second query_ result from among the plurality of query results, wherein the executable computer program instructions further comprises instructions for:

identifying the second search query (col. 10 line 32-33 and figure 3 wherein multiple query keywords are checked) from the plurality of search queries responsive to identifying the input signal (col. 10 line 27-28);

determining a first index score (fig. 3 w_{12} and col. 12 line 24-25; e.g. a ranking score) of the first piece of information (fig. 3; e.g. 304(2)) in the search result associated with the identified search query (fig. 3; e.g. 301(1)), the first index score measuring how well keywords in the identified search query match the first piece of information (col. 6 line 34-35; e.g. weights are assigned according to relevance);

determining a second index score (fig. 3 w_{21} and col. 12 line 24-25; e.g. a ranking score) of the first piece of information (fig. 3; e.g. 304(2)) in the second query result associated with the second search query, the second index score measuring how well keywords in the second search query match the first piece of information (col. 6 line 34-35; e.g. weights are assigned according to relevance);

adjusting a second query factor associated with the second search query responsive to the input signal and based on the second index score (col. 11 line 40-44 and col. 12 line 16-21), wherein adjusting the query factor associated with the identified search query comprises adjusting the query factor based on the first index score (col. 10 line 25-36);

locating a third piece of information (fig. 3; e.g. 304(M)) in the second query result associated with the second search query (fig. 3; e.g. 302(M));

determining a second score (fig. 3; e.g. w_{n1} for the third piece of information based at least in part on the second query factor associated with the second search query (fig. 3; e.g. 302(M));

wherein determining the second ranking sequence (fig. 5 drawing reference 510; e.g. a refinement of the results) of the merged query result further comprising determining the second ranking sequence of the merged query result based at least in part on the score for the second piece of information and the second score for the third piece of information (col. 12 line 25-27).

With respect to claim 4, Liu teaches the method of claim 1, wherein the input signal comprises user activity associated with the first piece of information (col. 8 line 45-51).

With respect to claim 24, Liu teaches the computer program product of claim 18, the executable computer program instructions further comprising instructions for:

generating the plurality of search queries associated with the merged query result (col. 6 line 38-47);

and adding information from results of the plurality of search queries into the merged query result (col. 8 line 23-25 and figure 4).

With respect to claim 25, Liu teaches A query system for ranking information, comprising:

a computer processor (130) for executing computer program instructions (col. 7 line 52);

a computer-readable storage medium having executable computer program instructions (132, 134) tangibly embodied thereon, the executable computer program instructions comprising instructions for:

a module (150) configured to receive a plurality of query results (col. 3 line 32-34 and figures 6-7; e.g. retrieving a plurality of images in response to a search) of a plurality of search queries (col. 3 line 23-25 and col. 7 line 67-col. 8 line 10 as well as figure 3 drawing reference 302 and col. 12 step 1; e.g. keywords parsed from a query) that were submitted separately (col. 5 line 67-col. 6 line 7 and col. 8 lines 11-14; i.e. the system may also simultaneously search of similar words wherein simultaneous searches can be seen as separately submitted queries);

a module (210-214) configured to merge (col. 8 line 22-23; i.e. *adding* found images to the result set) the plurality of query results (col. 3 line 32-34 and figures 6-7) into a merged query result (figs. 6-7), the merged query result (figs. 6-7) being associated with the plurality of search queries (col. 6 line 20-24 and figure 3 which shows keywords associated to images);

a module configured (216) to determine a first ranking sequence (fig. 4 drawing reference 412) of the merged query result (col. 7 line 15-18figs. 6-7);

a module (200) configured to present the merged query result to a user according to the first ranking sequence (412 and 416);

a module (220) configured to identify an input signal (figure 5 drawing reference 502) from the user (200) indicating an interest (col. 7 line 22-23) in a first piece of information (col. 7 line 22-23; i.e. an image a user finds relevant/not relevant) in the merged query result (figures 6-7);

a module (222) configured to identify a search query from the plurality of search queries (col. 3 lines 41-48, col. 10 step 4) associated with the merged query result (figs. 6-7), the identified search query (col. 3 lines 41-48, col. 10 step 4) being associated with a query result (figure 3 drawing reference 304 and col. 8 line 57; e.g. an association link) including the first

piece of information (col. 6 line 8-19), the query result from among the plurality of query results (col. 10 step 4; “for each positive example, check if any query is linked to it…” ;

a module (222) configured to adjust (col. 3 line 49-50) a query factor associated with the identified search query (col. 5 line 24-29; e.g. a weight indicating a relevance of a keyword to an image) responsive to the input signal (col. 8 line 52-64);

a module (210-214) configured to locate a second piece of information in the query result (col. 9 line 13-19; ”the feature and semantic matcher 152 also try to locate images that have similar low-level features as the example image selected by the user”; herein, the semantic and low-level features as well as the similar images found can be interpreted as an example of the "second piece of information in the query result") associated with the identified search query (col. 3 lines 41-48, col. 10 step 4);

a module (220-222) configured to determine a score for the second piece of information (col. 9 line 16-19) based at least in part on the query factor col. 5 line 24-29; e.g. a weight indicating a relevance of a keyword to an image) associated with the identified search query (col. 3 lines 41-48, col. 10 step 4);

a module (216) configured to determine a second ranking sequence (col. 12 step 7) of the merged query result based at least in part on the score (col. 7 line 49-50 and figure 5); and

a module (200) configured to present the merged query result to the user according to the second ranking sequence (col. 12 step 8 and drawing references 508m, 518 as well as figures 6-7)..

With respect to claim 26, Liu teaches The query system of claim 25, wherein the first piece of information is included in a second query result associated with a second search query in the plurality of search queries, the second query result from among the plurality of query results, the executable computer program instructions further comprises instructions for:

identifying the second search query (col. 10 line 32-33 and figure 3 wherein multiple query keywords are checked) from the plurality of search queries responsive to identifying the input signal (col. 10 line 27-28);

determining a first index score (fig. 3 w_{12} and col. 12 line 24-25; e.g. a ranking score) of the first piece of information (fig. 3; e.g. 304(2)) in the search result associated with the identified search query (fig. 3; e.g. 301(1)), the first index score measuring how well keywords in the identified search query match the first piece of information (col. 6 line 34-35; e.g. weights are assigned according to relevance);

determining a second index score (fig. 3 w_{21} and col. 12 line 24-25; e.g. a ranking score) of the first piece of information (fig. 3; e.g. 304(2)) in the second query result associated with the second search query, the second index score measuring how well keywords in the second search query match the first piece of information (col. 6 line 34-35; e.g. weights are assigned according to relevance);

adjusting a second query factor associated with the second search query responsive to the input signal and based on the second index score (col. 11 line 40-44 and col. 12 line 16-21), wherein adjusting the query factor associated with the identified search query comprises adjusting the query factor based on the first index score (col. 10 line 25-36);

locating a third piece of information (fig. 3; e.g. 304(M)) in the second query result associated with the second search query (fig. 3; e.g. 302(M));

determining a second score (fig. 3; e.g. w_{n1} for the third piece of information based at least in part on the second query factor associated with the second search query (fig. 3; e.g. 302(M));

wherein determining the second ranking sequence (fig. 5 drawing reference 510; e.g. a refinement of the results) of the merged query result further comprising determining the second ranking sequence of the merged query result based at least in part on the score for the second piece of information and the second score for the third piece of information (col. 12 line 25-27).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu as applied to claim 1 above in view of Barrett et al. ("Barrett" hereafter) U.S. Patent Application 2003/0135490.

With respect to claim 3, Although Liu teaches a lack of selection from a user of a first piece of information (i.e. the "No" branches in figure 5), they appear to lack teaching (with emphasis) the method of claim 1, wherein the input signal comprises lack of selection of the first

piece of information *for at least a specified amount of time from when the first piece of information is displayed to the user*.

Barrett, however, teaches wherein the input signal comprises lack of selection of the first piece of information *for at least a specified amount of time from when the first piece of information is displayed to the user* (paragraph 0012 step 16) for indicating a time a user spends with a result (i.e. duration) to calculate a user's interest for scoring purposes.

Accordingly, in the same field of endeavor (i.e. information search and ranking), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the interest gauged by Barrett would have given Liu further feedback information for calculating relevance for the benefit of presenting optimized and refined results.

Claims 13, 14, 19, 20, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu as applied to claims 1, 18, and 25, respectively, above.

With respect to claim 13 and similar claims 19 and 27, although Liu teaches refining search results due to a user input (figure 5 drawing references 502, 504 and 518 as well as col. 12 steps 3 and 7-8) to suggest refreshing a display, they do not expressly recite the method of claim 1, further comprising increasing a refresh rate of a display of the merged query result to the user responsive to receiving input signals at an increasing frequency.

However, it would have been obvious for Liu to teach increasing a refresh rate of a display of the merged query result responsive to receiving input signals at an increasing

frequency because in refining results based on user interest, the rate of display would be increased due to user interest (i.e. in a situation of a user continuing to select "similar" and thus retrieving refined results). Such is apparent in Liu's browsing behavior of a user (col. 9 line 53-59). Therein, it would have been obvious that a user's browsing behavior would determine subsequent queries for images so that refined (and thus refreshed) results would be presented in the next screen. Such a teaching of varying the refresh (refinement) rate would have been beneficial for the user to quickly refine results and locate the best result suited for their quer(y/ies).

Claims 19 and 27 are substantially rejected under the same rationale as claim 13 for reciting essentially the same subject matter.

With respect to claim 14 and similar claims 20 and 28, Liu teaches he method of claim 1, wherein the input signal is a first input signal and the interest is a first interest(drawing reference 502), further comprising:

receiving a second input signal indicating a second interest in a third piece of information (col. 12 steps 3 and 8 wherein step 8 repeats step 3 to suggest collecting a second indication of interest).

Liu does not appear to expressly recite varying a refresh rate of a display of the merged query result to the user based at least in part on the duration between receiving the first input signal and the second input signal.

However, it would have been obvious for Liu to teach varying a refresh rate of a display of the merged query result to the user based at least in part on the duration between receiving the

first input signal and the second input signal because, depending on the user's interest and feedback (i.e. a duration of input signals indicating if the user is interested or not), the results would have been refined (and thus refreshed) accordingly. Such is apparent when Liu describes a user's browsing behavior to select similar images and thereafter present refined (refreshed) results. Such a teaching of varying the refresh (refinement) rate would have been beneficial for the user to quickly refine results and locate the best result suited for their quer(y/ies).

Claims 20 and 28 are substantially rejected under the same rationale as claim 13 for reciting essentially the same subject matter.

(10) Response to Argument

Appellant's arguments in the Appeal Brief ('Brief') filed 3/17/2010 have been fully considered but they are not persuasive. Beginning on page 8 of the Brief, Appellant states that Liu does not disclose at least the following limitations of claim 1: (1) "adjusting a query factor associated with the identified search query ...; determining a score for the second piece of information based at least in part on the query factor associated with the identified search query", (2) "receiving a plurality of query results of a plurality of search queries that were submitted separately", and (3) "identifying a search query from the plurality of search queries associated with the merged query result, the identified search query being associated with a query result including the first piece of information".

As indicated in the following, Examiner respectfully disagrees.

35 U.S.C. 102(e) rejections

Argument I. "Liu does not disclose adjusting a query factor associated with a search query and determining a score for a piece of information based on the query factor"

On page 9 of the Brief, Appellant argues that Liu does not disclose adjusting a query factor associated with a search query and determining a score for a piece of information based on the query factor. Appellant further states that "It appears the Examiner equated the weights of the keyword-image links to both the claimed query factor associated with a search query and the claimed score for a specific piece of information". Examiner respectfully disagrees.

As cited above, Liu is seen to teach the claimed query factor at least as a weight assigned to associations between keywords and images (e.g. col. 5 line 24-29; e.g. a weight indicating a relevance of a keyword to an image). Accordingly, the weight is adjusted (Liu, e.g. col. 3 line 51-54; "The weights are adjusted according to the user feedback, thereby strengthening associations between keywords and images…). Therein, because the weight is associated to a keyword (e.g. a query), and is further adjusted, for example based on user feedback – or the claimed input signal from a user, the claimed query factor can be seen as taught by Liu's weight of keyword-image association.

Further, Liu is respectfully seen to teach the claimed "score for a piece of information based on the query factor". For example, col. 12, line 25-26 (step 7), Liu teaches computing a ranking score for each image using equation 7[1] to sort the results. As Claim 1 is recited in part

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[1] Note, in equation 7 (col. 11 lines 48 to col. 12 line 4), keyword/image associations (i.e. "weights" seen as the claimed query factor) are used for relevance, and accordingly, ranking.

(see second to last limitation), "determining a second ranking sequence of the merged query result based at least in part on the score". Accordingly, given the broadest reasonable interpretation of the claim, the recited "score" can be interpreted as a ranking score. Liu teaches such a score in col. 12, line 25. Moreover, because the ranking score is determined based the relevancy of a keyword to an image (i.e. "weight", which is equated to claimed "query factor" - see Liu, col. 5 lines 26-35 "…rank the images according to their relevance to the query and return the images in rank order for review by the user.").

Summarily, as indicated above, Appellant's argument of the Examiner equating the weights of the keyword-image links to both the claimed query factor associated with a search query and the claimed score for a specific piece of information is respectfully found unpersuasive. As seen above, Liu teaches the claimed "query factor" as a weight keyword-image association and the claimed "score" is taught by Liu as a ranking score for each image.

Argument II. "Liu does not disclose a plurality of separately submitted search queries"

On page 10-11 of the Brief, Appellant Argues that Liu does not disclose a plurality of separately submitted search queries.

Examiner respectfully disagrees and submits that Liu teaches a plurality of search queries (col. 3 line 23-25 and col. 7 line 67-col. 8 line 10 as well as figure 3 drawing reference 302 and col. 12 step 1; e.g. keywords parsed from a query) that were submitted separately (col. 5 line 67-col. 6 line 7 and col. 8 lines 11-14; i.e. the system may also simultaneously search of similar words wherein simultaneous searches can be seen as separately submitted queries).

More specifically, Liu teaches a user entering an initial query (e.g. drawing reference 402 of figure 4). Furthermore, a user may enter queries such as: "tigers"; "tiger pictures"; "Find pictures of Tigers"; and "I'm looking for images of tigers" (see Liu, col. 8 line 1-5). Thereafter, the system may extract one or more keywords from the query to identify images. In the rejection, Examiner has equated keywords in Liu to the claimed "plurality of queries". In other words, Examiner submits that a keyword serves as a query in that it is used in a search to identify results. Furthermore, the conclusion of equating keywords to queries may be derived from the interpretation that a query can be known to include only one keyword[2]. Furthermore, Appellant's filed specification (e.g. paragraph 0045) states that a keyword query may be "Tuesday" as well as currently pending claim 8 reciting wherein one of the plurality of search queries comprises one of *query term* (i.e. seen as a keyword).

Appellant also argues on page 10 that Liu merely teaches conducting image searches for a single query and is silent about separately submitted search queries. While Examiner does not contend that a user may submit a single query (e.g. 402, figure 4), Examiner does submit that a plurality of queries are submitted in the image retrieval process. That is, a user may enter in a query such as that listed in col. 8 lines 1-4; however, the system of Liu will extract keywords from said queries to identify images to retrieve. In one example, "tiger" can be extracted as well as "pictures" and "images". Examiner submits that the parsed results, each used for identifying images, may be seen as a plurality of search queries.

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[2] A definition of Query - The execution of a search on a search engine. The *keyword* or keyword phrase a *searcher enters into a search field, which initiates a search* and ...
www.georgiaseo.net/georgia-search-engine-optimization-glossary-of-seo-terms.html

In a further example, Liu's system is able to extract a keyword from the query (i.e. "tiger") and may also *simultaneously search* of similar words (e.g. cat, animal, etc) – see col. 8 lines 11-14. As such, a simultaneous search or, separately submitted search, may be seen as a plurality queries that were submitted separately. Therefore, in this example, a query such as "tiger" is submitted to be searched and simultaneously a search query of cat, animal, etc is also submitted to be searched.

Therefore, while a user may be seen to submit a single query, they system of Liu submits a plurality of queries (keywords) to retrieve images. Accordingly, Liu is seen to teach a plurality of search queries that were submitted separately.

Moreover, Examiner respectfully submits that given the broad scope of the claim limitation, separately submitted search queries are found in Liu. As seen above, a user enters a query, and then the system runs a simultaneous search (col. 8 line 13-14) with additional similar words. Herein, a user's entered query and the system's entered query can be seen as queries that are separately submitted (e.g. a query by the user and a query by the system). Examiner submits that the limitation does not clearly indicate "separately", and accordingly, the teachings of Liu teach separately by at least a user submitting a query and the system simultaneously submitting a query.

Nonetheless, other interpretations of Liu can lead to teach the claimed "separately submitted search queries". For instance, in the abstract of Liu, the user may specify *queries* (emphasis added on plural form) by using a combination of keywords and images[3]. Herein in

[3] In Liu, an image may be a query – col. 5 line 15.

this combination, a user submits a query, and separately, an image. Thus the queries (i.e. the keyword query and the image query) are seen as submitted separately.

Lastly, in the abstract of Liu, their system is able to accept new queries and train itself for future queries. Therein, the new or future queries are submitted at least separately from past queries. Thus, Liu again teaches queries that are separately submitted.

Argument III. "Liu does not disclose identifying a search query from the plurality of separately submitted search queries"

On page 11-12 of the Brief, Appellant argues that Liu does not disclose identifying a search query from the plurality of separately submitted search queries.

Examiner respectfully disagrees given the rationale above and submits that Liu teaches separately submitting a plurality of queries.

Further, Examiner submits that Liu discloses identifying a query out of multiple search queries that were submitted separately at least because Liu is able to identify a link between a search query and an image selected by a user (e.g. see Liu, col. 8 lines 55-57). In other words, because Liu teaches keywords in the original query are associated with the user-selected images (i.e. a piece of information that a user indicated interest in) and a large weight is assigned to this link. See further in figure 3 wherein a keyword from multiple keywords is respectively identified in correspondence with their respective images. Additionally, Liu teaches a user is given the ability to provide relevance marks (Liu, col. 9 line 60-61). Furthermore, Liu is able check for each positive example (e.g. a relevant image) if *any* query keyword is linked to it and if

so a link is created[4]. Thus, because Liu's system is able to link *any* query keyword *from* the input query based on a user's feedback to an image, Liu is seen to identify a query out of multiple search queries. Furthermore, because the piece of information that the user selected is part of a corresponding query result, Liu teaches that the identified query (e.g. query indicated in linking relationship) is associated with a query result including a first piece of information that the user is interested in.

35 U.S.C. 103(a) rejections

Examiner respectfully submits as the arguments pertaining to limitations (1)-(3) are found unpersuasive, similarly, the arguments found on page 13 of the Brief are found unpersuasive. Specifically, Liu is relied upon to teach the multiple queries as claimed and thus the claims remain unpatentable by Liu in view of Barrett.

[4] See further the example given in Liu, col. 10 line 1-12 wherein the system is able to identify "tiger" in relation to positively marked matches. Thus if multiple queries "tiger", "cat", "animal", are submitted (col. 8 line 13-14), then "tiger" is identified.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/ROBERT TIMBLIN/

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